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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/728,808	12/08/2003	Kia Silverbrook	ZG113US	8908
24011	7590	06/29/2005	EXAMINER	
SILVERBROOK RESEARCH PTY LTD 393 DARLING STREET BALMAIN, 2041 AUSTRALIA			MITCHELL, JAMES M	
			ART UNIT	PAPER NUMBER
			2813	

DATE MAILED: 06/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/728,808

Applicant(s)

SILVERBROOK, KIA

Examiner

James M. Mitchell

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/12/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is in response to the application filed December 8, 2003.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 5-7 and 15-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Miyajima (U.S. 6,350,113).

3. Miyajima (Fig. 30) discloses:

(cl. 1) a two part mold, the mold comprising: a first half (20b) and a second half (20a);

the first half and second half, when brought together defining mold cavities (28);

(cl. 5, 15) with the mold cavities have spacing which corresponds to a spacing of a wafer;

(cl. 7) with the first half of the mold has a lower surface in which recess/grooves (28) are formed and the second half having grooves/recess formed (28) and the recesses and grooves defining cavities;

4. With respect to the intended use limitation "for making wafer scale caps,"

Miyajima's structure/product is the same as applicant's claimed structure. As such, the

intended use limitation does not impart patentability, since it has been held that the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ2d 1647 (1987).

5. With respect to the caps/wafer of claim 1, while the prior art shows a top cover (i.e. dotted line forming top of package in Fig. 30 & item 35 in Fig. 12) and therefore a thin cap formed by bring first and second half together and squeezing out material, and a wafer portion (12), because the antecedent relies on an intended use, not an affirmative recitation, no cap is affirmatively claimed¹ as apart of the product.

6. With respect to product by process limitations of claims 6, 15, 16 and 17 that the mold cavity was formed by deep silicon etching techniques or X-ray lithography, material is squeezed, or bring halves together to form cap, the prior art structure is the same as the claimed invention. "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the

¹ Assuming there was an affirmative recitation for caps, the claim would be rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: the placement of the caps in context with the other structures.

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prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 8-10, 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyajima (U.S. 6,350,113) in combination with Mishima (U.S. 6,530,764) and Miyajima '162 (U.S. 6,344,162).

9. Miyajima discloses the elements stated in paragraphs 3-6 of this office action, but does not appear to show the first and/or second half includes holes formed through it and the holes located in registry with recess, there being provided a first half release wafer from which project pins, the located in registry with first holes, the first half having a thickness in the area of the first holes and the pins being longer than the thickness, the first/second half release wafer having a first portion, and pins flush with an interior end of holes with a gap between release wafer and first/second half.

10. However, Mishima utilizes (Fig.7) first and/or second half (35a,b) includes holes (i.e. space taken by item 28) formed through it and the holes located in registry with

recess, the first half having a thickness in the area of the first holes and pins (28) being longer than the thickness.

11. Miyajima'162 (Fig. 7) discloses the use of ejector pins (28a) with a release wafer (40), such that there being provided a first half release wafer from which project pins, the located in registry with first holes, and pins flush with an interior end of holes (i.e. inside) with a gap between release wafer and first/second half (i.e. portion of pin protruding from half).

12. It would have been obvious to one of ordinary skill in the art to incorporate ejector pins in the first and second half of the mold in Miyajima, such that pins would be flush with an interior end of holes with a gap between release wafer and first/second half whose use as shown in Miyama '162 in order to eject the package as taught by Mishima (Col. 2, Lines 18-35).

13. Claim 2-4, 11, 12 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyajima (U.S. 6,350,113) as applied to claim 1 and further in combination with Cordes et al. (U.S. 6,390,439).

14. Miyajima discloses the elements stated in paragraphs 3-6 and further a thermoplastic (35), but does not show that the mold and wafer is silicon or that the material is transparent to infrared light.

15. Cordes utilizes a semiconductor, silicon (i.e. *transparent to infrared*) wafer and mold (Abstract; Col. 10, Lines 39-44).

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16. It would have been obvious to one of ordinary skill in the art to form the wafer and mold of Miyajima from silicon in order to provide a semiconductor as required by Miyajima (Col. 4, Lines 36-37) and to provide CTE matching thereby eliminating shifting as taught by Cordes (Col. 10, Lines 39-42).

17. Furthermore, the use of silicon for CTE matching would have been obvious, since it has been held that to be within the general skill of a worker in the art to select known material on the basis of its suitability for intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416 (CCPA 1960).

18. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miyajima (U.S. 6,350,113), Mishima (U.S. 6,530,764) and Miyajima '162 (U.S. 6,344,162) as applied to claim 13, and further in combination with Cordes et al. (U.S. 6,390,439).

19. Miyajima further a thermoplastic ("resin", 35), but does not show that the mold and wafer is silicon or that the material is transparent to infrared light,

20. Cordes utilizes a semiconductor, silicon (i.e. *transparent to infrared*) wafer and mold (Abstract; Col. 10, Lines 39-44).

21. It would have been obvious to one of ordinary skill in the art to form the wafer and mold of Miyajima from silicon in order to provide a semiconductor as required by Miyajima (Col. 4, Lines 36-37) and to provide CTE matching thereby eliminating shifting as taught by Cordes (Col. 10, Lines 39-42).

22. Furthermore, the use of silicon for CTE matching would have been obvious, since it has been held that to be within the general skill of a worker in the art to select

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known material on the basis of its suitability for intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416 (CCPA 1960).

Conclusion

23. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art discloses in: Palmer, Karpman, Yoshihara, Kurle, Marrs, Ishida and Salentino the use of a mold/support to form various types of caps; Osada, Kiyotomo and Romagnoli the use of pins in mold; Miyajima '389 and Miyajima '243 the use of release wafers; and Ohara and Salitino the use of silicon for supports/molds.

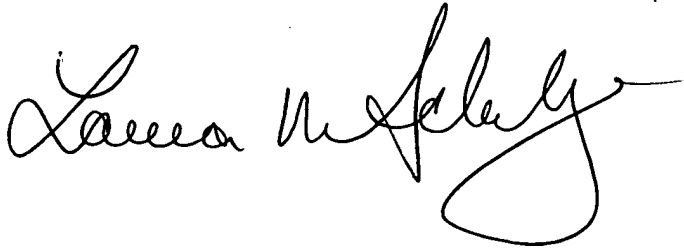
Any inquiry concerning this communication or earlier communications from the examiner should be directed to James M. Mitchell whose telephone number is (571) 272-1931. The examiner can normally be reached on M-F 8:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead Jr. can be reached on (571) 272-1702. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jmm
June 22, 2005

A handwritten signature in cursive script, appearing to read "Lauren M. Foley".